Stories from Craters of the Moon

by Paul Miller, 2015 Artist-in-Residence

I'm standing on the edge of a wide, quiet landscape at Craters of the Moon National Monument and Preserve, a 750,000-acre sweep of volcanic rock in Idaho's south-central Snake River Plain. A stout limber pine on my right frames a view across miles of lava to the Pioneer Mountains on the northwestern edge of the park. The mountains, layered with snow on this early April afternoon, disappear at times behind racing clouds. It could be snowing up there right now.

A light breeze runs across the lava and shakes pine limbs and sagebrush. I zip my jacket tighter and continue south on the Tree Molds Trail. I've heard stories about this park, about how high winds can knock you into a separate reality, how the heat of summer can boil you senseless with no hope for water.

"This is one of the harshest environments on Earth, with 200-degree swings in temperatures between summer and winter," Dan Buckley, superintendent of the park, told me. Surface temperatures on the black lava can reach almost 180 degrees in summer and drop to minus 30 or lower in winter.

I take two steps onto the edge of the lava and feel loose cinders crunch like broken glass under my boots. I can't help wondering what kind of life thrives out here. And how is it possible for our own species to move through the depths of this complex and risky land and emerge in one piece?

On this second day of my two-week visit as Artist-in-Residence at the park, I'm wary not about heat or water but the weather. This terrain is new to me and seems benign – so far – but I can't let my guard down too much. Just this morning, pellets of snow and sharp wind chased me down off North Crater Trail, a mile or so north of where I am now. Ten minutes later, though, the sun came out and started playing around in a clear sky. In an odd way, it's comforting to know the weather is as volatile and quick-moving as it is in the Colorado Rockies, where I live.

I can't take my eyes off the lava fields I'm skirting. In the months spent preparing for my visit, I had imagined lots of flat, dark lava, and there is certainly plenty of that. But in front of me now, and in every direction, is a wilderness of lava fissures, domes, caves, craters, ridges, cinders, runnels, ropes, and splinters, a delightfully convoluted mess of some of the newest rock on the planet. At times I swear I can hear lava cooking along the ground, sizzling up from the belly of the planet, or blasting hot magma into the air in red-and-orange geysers. It's stunning to me that the most recent eruption at Craters was a mere 2,000 years ago. In geologic time, that's like it just happened. And from what Dan has told me, the next eruption could be tomorrow or thousands of years from now. Nobody can say for certain.

All is quiet now. Moving south on the trail, I find the tree molds that give the trail its name. Long ago, the Blue Dragon flow (so named because of the haunting blue visage of the lava's surface) had surrounded the trees and ignited them, then cooled to form molds. One well-formed mold lies horizontally about four feet long, showing an impression of the tree that looks like tire treads or the skin of an alligator. More than 140 molds have been mapped in the monument, with the largest trunk width measuring 35 inches.

And to think this is just one feature in a tiny fraction of the park. Surrounding me and close to the Visitor Center and park headquarters are the trails I've been exploring, along with volcanic sentinels such as Silent Cone, Big Craters, Inferno Cone, Broken Top, and Big Cinder Butte, which at 6,515 feet is the highest cinder cone in the park, formed in days long gone by a fountain of liquid rock that reached at least 1,500 feet in height. Around and between the sentinels are vast expanses of lava called pahoehoe, Hawaiian for "ropy", and 'a'ā, impassible barriers that look like blackened razors piled in jagged heaps.

Hiking back to the trailhead on ground that is, gratefully, level and soft from melting snow, I realize my two-week stay won't be long enough, not by months or years. Within Craters of the Moon and far off to the south and east lie virtually unexplored territories formed during the Late Pleistocene-

Holocene about 15,000 years ago. These modern easy-going basaltic eruptions mostly covered the scars left behind by much more explosive rhyolitic volcanic events that blasted thousands of cubic miles of glowing material onto the ground and into the atmosphere millions of years ago. So much material was hurtled out that entire mountain ranges were swallowed in the resulting depressions, called calderas. Now, only traces of the rhyolitic eruptions remain along the margins of the Snake River Plain and in Yellowstone.

Also remaining is the Great Rift, a series of parallel ruptures in the Earth's surface that run some 52 miles southeast from the Pioneer Mountains. The fissures, some of which are 600 feet deep, are the source of a wealth of volcanic features such as shield volcanoes, cinder cones, and three geologically recent lava fields: Craters of the Moon, the northernmost and largest of the three; Kings Bowl, the smallest; and Wapi lava field toward the southern end of the Great Rift. From a bird's eye view, the rift looks like a big knife had cut open the Earth to release unimaginable amounts of lava in explosive bursts that reached 2,000 feet high. Such events, which may have lasted for many years, created a reign of rock that permanently rearranged entire ecosystems.

Standing on a vantage point a hundred feet or so above the floor of the lava, I scan the horizon for signs of life. Nothing moves, nothing breathes except for junipers, sagebrush, matted buckwheat, and an occasional mountain bluebird. It's exhilarating and scary to think you could walk out there and not see another soul for days on end. And, in fact, some people have wandered off trail and never made it back. It's easy to see that this is a place to step into with caution and deference.

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A few days later, I'm bouncing along in a truck on a dirt road that would make a cow path feel smooth. Four staff members of the park are jostling around in the cab with the driver, biologist Todd Stefanic, and me: intern Kathleen Slocum, botanist Jim Bromberg, and park rangers Ron Silberstein and Allison Konkowski. They'll be joining five others at a drop-off point on the southern edge of the park to begin a three-day hike across the lava.

Excited chatter gives way to silence, which gives way to silly jokes. In spite of the light mood, I know they're mentally preparing for miles of tough hiking, wondering if they'll be able to find water out there, hoping nobody will break a bone or lacerate themselves badly enough to require serious medical help.

We pull up to the trailhead and step out into a cool, clear morning. Five other hikers are already there and preparing backpacks: Superintendent Buckley; Ted Stout, chief of interpretation; Brian Bean, conservationist and owner of Lava Lake Land and Sheep Co.; botanist Mike Mancuso; and biological technician Gilbert Moreno. Some of them have done similar backcountry hikes along the Great Rift over the past few years – they call themselves Rifters – and know generally what to expect. Water, I hear over and over, is the primary concern, so the hikers carry a lot of it and thus resemble mobile water tanks.

At one point, I help lift Allie's pack onto the tailgate of a truck and almost collapse under the weight, which must be close to 70 pounds. She's a tall, lithe woman, a veteran Rifter, and a fast hiker, as I've been told. I wonder whether the weight will slow her down and decide: probably not. To enhance safety, Dan has assigned partners for the group, and her partner is Gilbert, whose pack must weigh at least as much as Allie's. He's carrying something like 3 gallons of water, a challenging 25 pounds of liquid life.

Dan, who has the same shaggy, sleepy countenance as the desert rascal Edward Abbey, takes time to address the group on safety and logistics. Then comes the worst moment of the trip for me: waving goodbye. Although I was invited along on the expedition, a heel spur is keeping me from joining

them. The nine Rifters walk off through sagebrush and disappear in moments over a small rise. I'm left staring at a heartbreakingly blue sky.

Although the Craters backcountry is rarely visited – thousands more people have summited Mount Everest in the past century – Native Americans traveled within and along the margins of the monument for countless generations, following animal migrations to more fertile places. In the 1800s, scientists, geologists, and pioneers explored the park, but it wasn't until Bob "Two-Gun" Limbert turned his full attention to the area in the 1920s that the public's interest was engaged. A taxidermist, quick-draw artist, and overall renaissance man of the West, Limbert exercised his considerable curiosity and outdoor skills out on the lava fields, traversing the entire Great Rift on one trip from south to north. On that trip in 1920, his company included W.L. Cole, another explorer; a dog named Teddy; and equipment including food, surveying gear, rifles, and a heavy 5x7 box camera on a tripod.

Seventeen days and 80 miles later, the expedition arrived at the base of the Pioneer Mountains, worn out but exhilarated. Limbert was so enamored of the unique geologic formations that he rallied for preservation of the area. A prolific and published writer, he at one time noted: "To stand and gaze with amazement mingled with fear at things of which the world knows nothing…passing alone through volcanic craters…crossing miles of folds of rock similar to the folds of a huge blanket was indeed an experience never to be forgotten."

Thanks to Limbert's efforts and other inspired reports from the region, President Calvin Coolidge created Craters of the Moon National Monument in 1924, calling it "a weird and scenic landscape peculiar to itself."

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While the Rifters are gone on their expedition, I think about what Dan had told me about this place, where he's been superintendent for 3½ years. Before he left on the trip, I asked him why he thought it was important to take risks venturing into the backcountry. He mentioned the value of getting park staff out into the land they're responsible for, so they can better appreciate it and talk about it in more depth with visitors. He closed his eyes and thought for a long moment.

"A lot of it is pure curiosity," he said. "I mean, why did we go to the moon? What did we hope to find there? Why do we go down into the oceans? We are exploring, curious animals. And here's a part of Idaho, part of the U.S., that isn't that well known. It is that way because it's so difficult to travel through. That in itself is a challenge.

"The whole park may never be explored. Within the horizontal terrain are all these crevasses and undulations and caves. We know of about 450 caves here in the park and preserve. We're guessing that there's probably 3,000 or 4,000 caves. Who wouldn't want to go out there and discover new ones?"

Flora and fauna that have adapted to the harsh climate of Craters may help us deal with future climate change or help in other ways, he said. "Species are out there surviving in an extreme environment, and we may well benefit by figuring out how they survive, what mechanisms are involved. There may be scientific value in that. Maybe some species have medicinal values, I don't know. That's why we go into the jungles of South America, to look for new pharmaceuticals. There may be similar species here that could help humans in some ways."

He admitted there was a small likelihood that a discovery at Craters of the Moon would save mankind. "But we will find things, and whatever value they have might not be realized in our lifetimes. It may prove valuable later on, though. That's how science works."

He was silent again for a long time. We were sitting in the darkening living room of his house, steeped in quiet except when a pine log tumbled in the wood stove, exposing red, glowing ash. Outside, I thought I saw a bat flit past the window in the last evening light.

"The more time I spend here the more enchanted I become by the place," he said. "The more I explore the more I realize how special it is. I liken the rocks out here to snowflakes – no two are alike. I could spend a lifetime right here in my back yard looking at the rock formations just on the cinder slope behind my house."

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High-wind warnings and snow are posted for the day the Rifters are due back. It also happens to be the longest mileage they'll be hiking to the pick-up point at Tree Molds trailhead. The morning is relatively calm, but around noon the wind starts whipping snow sideways, sometimes limiting views to a few hundred yards. I'm mostly housebound at Dan's place, glancing at times out the front window, watching for the crew to return. If the trek hadn't been hard enough with heavy packs and sore feet, they'll now have wind gusting to 50 mph to hike through. It's hard to imagine crossing miles of lava, cinder, and sagebrush in conditions like this.

Finally, at mid-afternoon, a couple of big white trucks drive past the house to unload gear and tired hikers at an administration building a few doors down. Ten minutes later, Dan's house is full of boisterous noise from a ragged, happy crew. Other than minor cuts, sore muscles, and blisters, everybody has emerged from the backcountry unscathed. That alone is cause for celebration.

With the help of others, Dan starts preparing a generous dinner while conversation veers from lava to local politics to weather to favorite moments of the trip.

Brian, a garrulous man who, in his early 60s, is the oldest of the hikers, says one favorite moment was finding an almost complete elk skeleton in a crack of the lava 45 minutes into the first day of the hike. "Here's an animal that knows how to move, incredibly confident, and the lava took its life. We're looking down and there's a grinning mandible and maxilla down there. Allie went down and played with the scapula."

Jim and Mike, both accomplished botanists, pick flora – of course – as favorite moments. Jim also mentions sitting around after dinner on the lava, passing around three kinds of whiskey and pudding. "And seeing tiny yellow monkeyflowers."

"I'm very partial to the limber pine," Mike says. "They're wonderful. You can't help wondering how they got there." A discussion ensues about how Clark's nutcrackers cache pine seeds way out on the lava fields. "Nutcrackers can hide up to 100,000 seeds in a year and remember where they are, even below 2 feet of snow," Allie, a veteran of previous Great Rift hikes, says. She adds: "My favorite part was just hiking around with everybody and breaking off into different groups and chatting as you're going along, experiencing this weird place with other people and hearing their interpretation of it. Stars were just ridiculous out there, too, so vibrant."

Ron names Blacktail and Sheeptrail buttes as highlights. Everybody agrees that Blacktail Butte is uniquely beautiful. "It's one of the greatest places in the park," Dan says while running in and out of the kitchen. "The Great Rift goes right through the butte, and the valley running through it is amazing." He talks more about finding explosion pits and "all sorts of Native American evidence, arrowheads, chips from making tools, rock rings."

"There's something magical about Blacktail," Ted says. "It's a place you don't actually stumble onto, as far removed from every other access point as it is."

"The lava that came spewing out of Blacktail Butte was phenomenal to see," says Kathleen, one of the younger members of the crew and first-time Rifter. "The spatter cones were just awesome. You wonder how the different types of lava exploded, try to imagine what was going on and where, and all the ripple marks and the lava fans and flows and where it got stuck and where it jumbled. That was just so cool."

As conversations continue long into the evening, I realize that all of the talk, every bit of it, centers around Craters of the Moon. It's comforting to know there will always be people like those surrounding me who are so motivated to explore this unknown volcanic landscape, to find such satisfaction in moving through its interior, to catch glimpses of life that few other people have seen. Through their eyes and my own experience, I can see how this place takes hold of your imagination and works its way into your soul.

It's also comforting to know that, although I may not have the chance to see Blacktail Butte, or discover an odd insect or unknown patch of lichen or moss, or see a great horned owl, prairie falcon, or coyote race away across some forgotten lava field, or discover a lava tube with a small, life-giving patch of snow in a depression – and who knows, maybe I will – it's good to know that it's all out there, thriving in thousands of square miles. It's life at its most fundamental best, most of it untouched by humans, a different universe evolving and surviving and flowering on a volcanic swath of earth in our own back yard in Idaho.

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